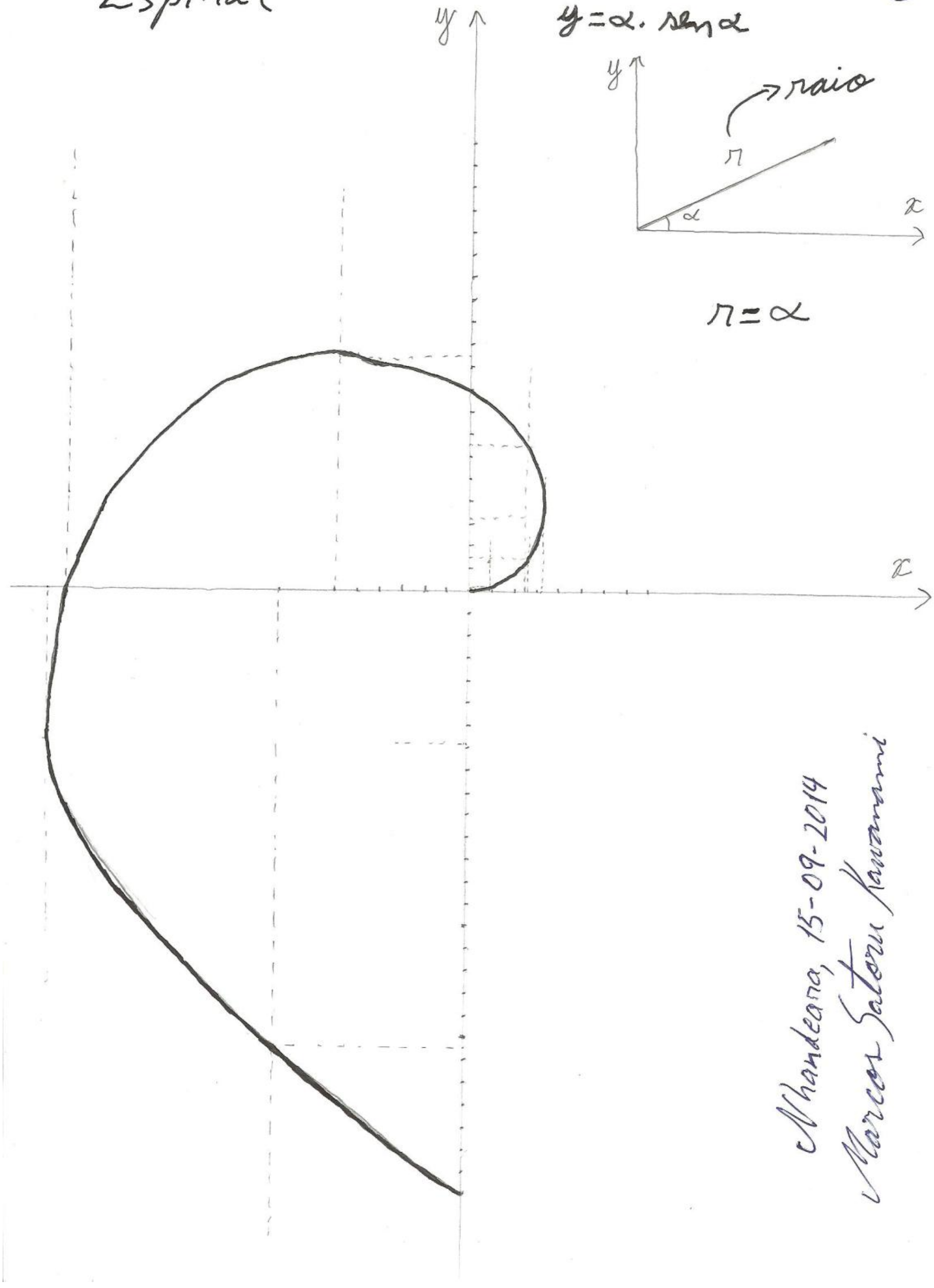
Espiral

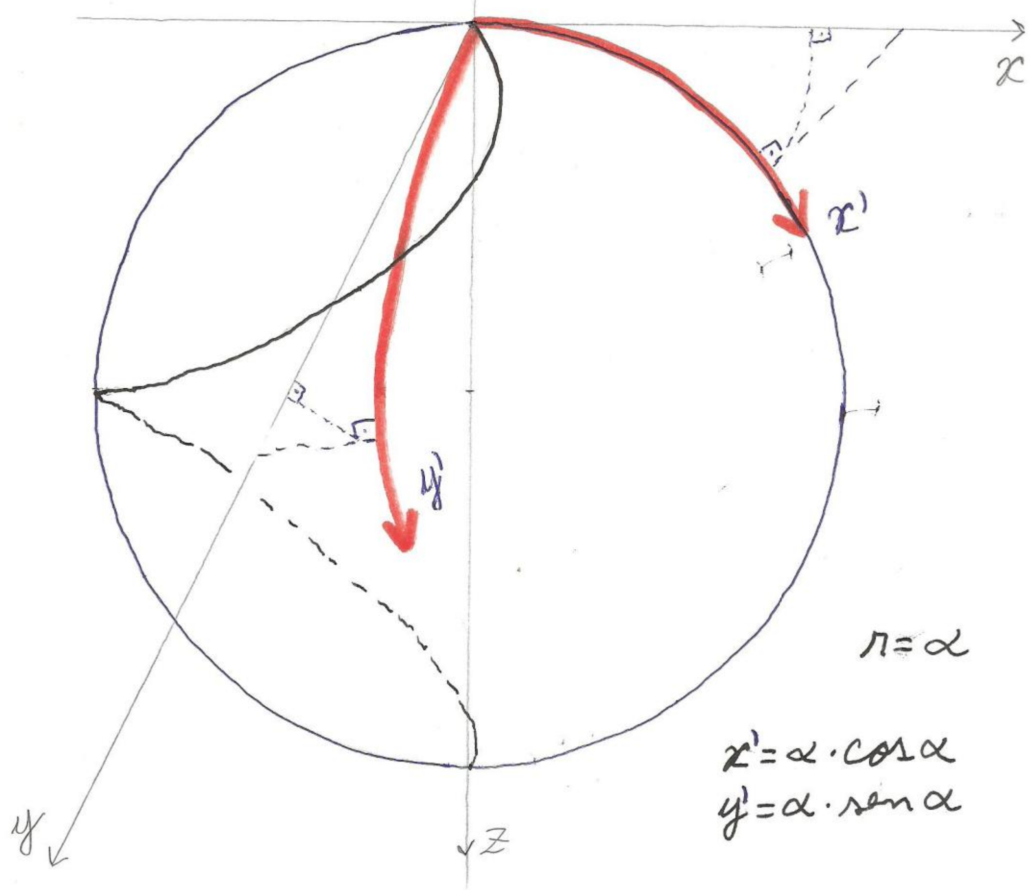
$x = \alpha \cdot \cos\alpha$
$y = \alpha \cdot \operatorname{sen}\alpha$



$r = \alpha$

Mandeana, 15-09-2014
Marcos Satoru Kawanami

Espiral na Esfera



$r = \alpha$

$x' = \alpha \cdot \cos\alpha$

$y' = \alpha \cdot \operatorname{sen}\alpha$

$\mathcal{D}$ = diâmetro da esfera $\qquad Z = \dfrac{\mathcal{D}}{v} \cdot \dfrac{\alpha}{360^\circ}$

v = número de voltas na esfera

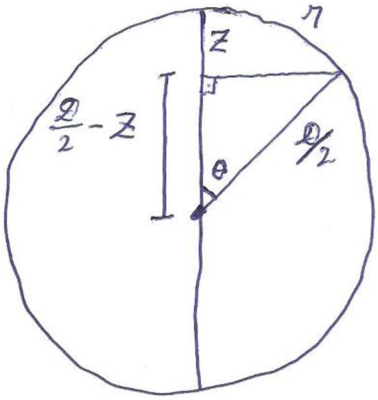
R@ = raio da espiral

Nhandeara, 15 de setembro de 2014

Marcos Satoru Kawanami

$$\begin{array}{l} R@ \text{ — } \dfrac{\mathcal{D}\pi}{2} \\ \alpha \text{ — } 360^\circ \cdot v \end{array} \Rightarrow v = \dfrac{\mathcal{D} \cdot \pi \cdot \alpha}{R@ \cdot 720^\circ}$$

$\underbrace{r = R_{\odot}}_{\text{raio da espiral}}$



$$\theta \text{ — } r$$
$$90^\circ \text{ — } \frac{\pi D}{4}$$

$$\boxed{\theta = \frac{360^\circ \cdot r}{\pi \cdot D}}$$

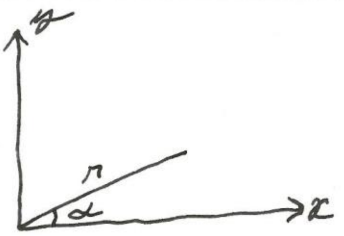
$$\cos\theta = \frac{\frac{D}{2} - Z}{\frac{D}{2}}$$

$$Z = \frac{D}{2} - \frac{D}{2} \cdot \cos\theta$$

$$\boxed{Z = \frac{D}{2} - \frac{D}{2} \cdot \cos\left(\frac{360^\circ \cdot r}{\pi \cdot D}\right)}$$

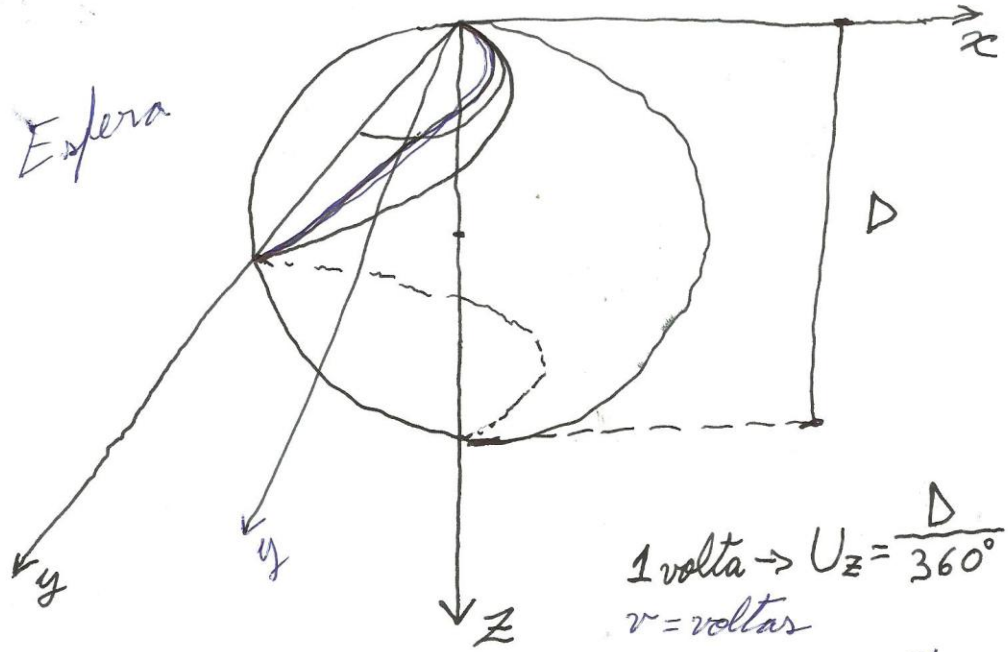
Nhandeara, 28/09/2014

Marcos Satoru Kawanami



$$\boxed{r = \alpha}$$

$$\left.\begin{array}{l} x = \alpha \cdot \cos\alpha \\ y = \alpha \cdot \mathrm{sen}\,\alpha \end{array}\right\} \text{espiral}$$



1 volta → $U_z = \dfrac{D}{360°}$

v = voltas

$$Z = U_z \cdot \alpha = D \cdot \frac{\alpha}{360°} = D \cdot \frac{\alpha}{360° \cdot v}$$

$$Z = \frac{D}{v} \cdot \frac{\alpha}{360°}$$

$$\left\{\begin{array}{l} D = \text{diâmetro} \\ v = \text{voltas} \end{array}\right.$$

U_z = unidade do eixo z